

# **PAHAMUNAYA SCHMID, A NEW GENUS RECORD FROM CHINA, WITH DESCRIPTION OF A NEW SPECIES (TRICHOPTERA, POLYCENTROPODIDAE)**

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**Abstract** The genus *Pahamunaya* Schmid, 1958 is recorded for the first time from China, and a new species *Pah. sinensis* sp. nov. from Southern China is described and figured. The type specimens are deposited in the Insect Collection of Nanjing Agricultural University, China.

**Key words** Trichoptera, Polycentropodidae, *Pahamunaya*, new species, new record.

## **1 Introduction**

The genus *Pahamunaya* was established by Schmid in 1958, based on *Pah. layagammeda* Schmid from Sri Lanka. Up to 2012, only 16 species of this genus are currently known from the world, of which 14 species occur in the Oriental Region and 2 species in the Afrotropical Region (Morse, 2012).

When establishing it, Schmid considered genus *Pahamunaya* to be closely related to *Cernotina* Ross, based on the narrow wing with reduced wing venation. However, Neboiss (1993) and Li (1998) considered *Pahamunaya* and *Cyrnoides* Ulmer as sister species, based on the absence of fork 3 in each forewing. Kjaerandsen and Netland (1997) also stated that *Cyrnoides* is very closely related to *Pahamunaya* species and that the latter may be a junior synonym of the former. Chamorro-Lacayo (2009) recovered a paraphyletic *Pahamunaya* in several of her analyses, with *Pah. joda* Malicky & Chantaramongkol sister to *Cyrnoides scotti* Ulmer and *Pah. jühmita* Schmid & Denning sister to *Cernotina*. Oláh and Johanson (2010) redescribed this genus and included it in the *Cyrnoides* diagnostic genus cluster.

No *Pahamunaya* has previously been reported from China. After examining all the polycentropodids preserved in the Insect Collection of Nanjing Agricultural University, we found a new species with wing venation extremely similar to that of genus *Cernotina*. However, the wings are narrow and each forewing lacks a median cell; the second segment of each maxillary palp has a small, acute process medioapically; and the tibial spur formula is 3, 4, 4,

congruent with the diagnosis characters for the Oriental-Afrotropical genus *Pahamunaya* (Kjaerandsen *et al.*, 1997) and the male genital pattern is more similar to that of other species in this genus than to those of other polycentropodid genera. Therefore, we place this new species in the genus *Pahamunaya*.

The specimens examined below were mainly collected in an expedition to Guangdong and Guangxi Provinces in 2004 organized by the junior authors. All type specimens are stored in 80 % alcohol in the Insect Collection of Nanjing Agricultural University, China. Terminology follows Schmid (1958) and Kjaerandsen *et al.* (1997).

## **2 *Pahamunaya* Schmid, 1958 New record to China**

*Pahamunaya layagammeda* F Schmid, 1958. *Arch Hydrobiol.* 54: 4, 26, 35, 85–86, pl. 14 f. 16–18.

Type species: *Pahamunaya layagammeda* Schmid, 1958. Original designation (monobasic).

Diagnosis (Oláh *et al.*, 2010). The species in this genus have spur formula 3, 4, 4; the 2nd segment of each maxillary palp lacks a setose mesoapical lobe or cushion, but has instead a small, pointed, dark, spine-like process. The forewings each have a closed discoidal cell, an open median cell, and apical forks 2, 4, and 5 (Fig. 1); the hindwings each have open discoidal and median cells, and apical forks 2 and 5 (Fig. 1). In the genitalia, the species are characterized by possessing a large, weakly sclerotized and well-setose segment X.

## **3 *Pahamunaya sinensis* sp. nov. (Figs 1–5)**

Diagnosis. This new species is similar to

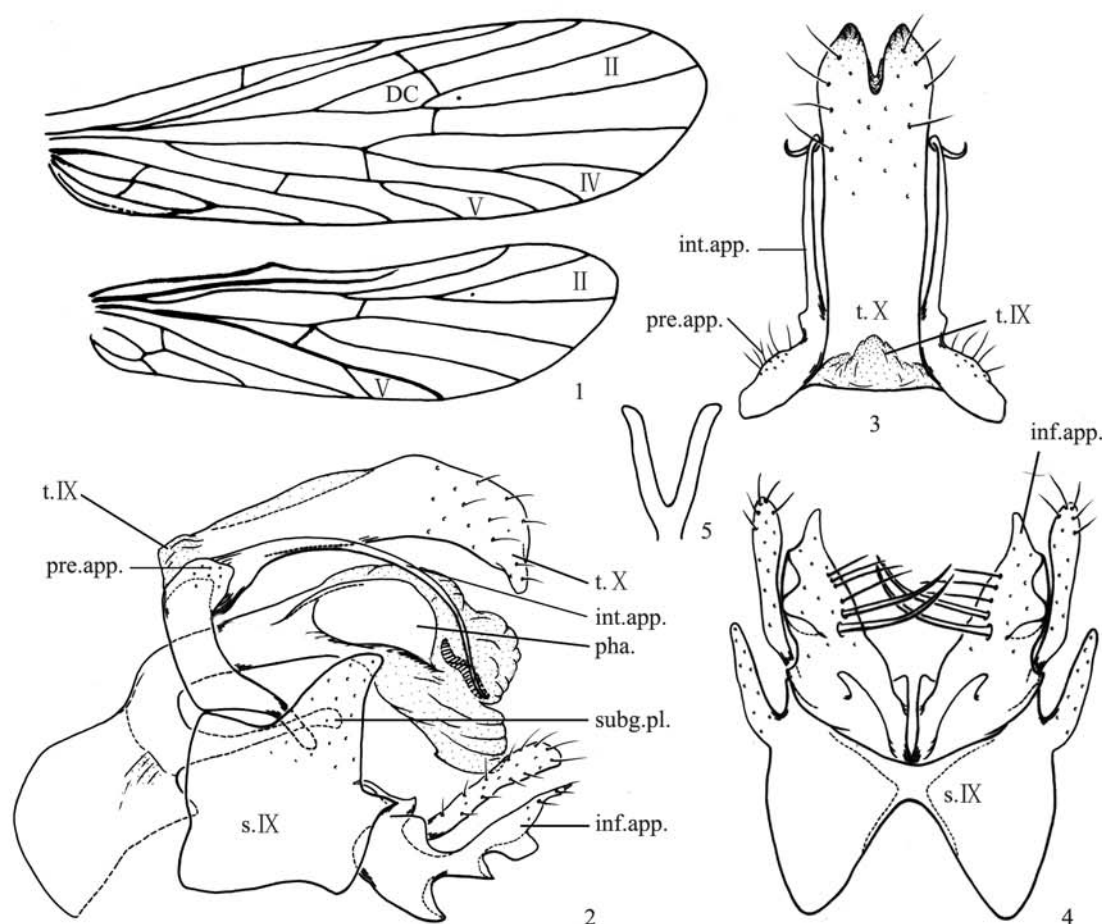
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*Pahamunaya directoris* Malicky, 1995, from Vietnam in having sternite IX subquadrate in lateral view, each posterodorsal margin projects as a tall, dorsal process; tergum X is long and slightly broadened in its distal half, and the intermediate appendages are each extended in a long, slender process, which is recurved ventrad in its distal 1/3 and with its apex out-curved. However, it differs from the latter in that the inferior appendages each has its elongate dorsal portion divided into two lobes that are equal in length, the anterior lobe is club-like and setose, the posterior lobe is flat and subtriangular except for a triangular basoventral

projection with its outer edge bearing two earlobes and its inner margin bearing two long, stout setae basomesally and a row of 3–4 shorter and finer setae distally in ventral view. Moreover, the setose anterior lobe of each inferior appendage is absent in *Pah. directoris* and the dorsal portion of each posterior lobe of the inferior appendage is divided into a short trilobed process apically with no projection on its outer edge and with its basoventral projection forming a large, simply curved lobe bearing long apical setae in ventral view.



Figs 1–5. *Pahamunaya sinensis* sp. nov. 1. Venation of fore- and hind wings. 2–5. Male genitalia. 2. Left lateral view. 3. Dorsal view. 4. Ventral view. 5. Subgenital plate, ventral view. inf. app. = inferior appendage. int. app. = intermediate appendage. pha. = phallus. pre. app. = preanal appendage. s. IX = sternum IX. subg. pl. = subgenital plate. t. IX = tergum IX. t. X = tergum X.

**Description.** Head and body general straw color, with concolorous wings. Length of each forewing 3.3–3.7 mm ( $n = 5$ ).

**Male genitalia.** Heavily sclerotized. Sternite IX subquadrate, each posterodorsal margin projecting in elongate dorsal process almost 2/3 times as high as rest of sternite IX with blunt apex directed slightly backward in lateral view (Fig. 2); in ventral view anterior margin deeply excised in V shape, posterior margin broadly concave such that midline length of

sternite IX only 1/5 of lateral length (Fig. 4); tergum IX very short, represented by membranous area at base of tergum X (Fig. 3). Tergum X long and narrow, weakly sclerotized and well-setose, about 3.5 times as long as its width with short apico-mesal cleft in dorsal view (Fig. 3); in lateral view, gently arched and slightly broadened in distal half, each apicoventral end with small projection directed ventrad (Fig. 2). Preanal appendages each fused with base of its intermediate appendage and reduced to small, hair-

bearing lobe in dorsal and lateral views (Figs 2–3). Intermediate appendages projecting caudad as long, slender processes, curved ventrad and with apices directed outward, not reaching as far as the tips of inferior appendages (Fig. 3); lower inner angles produced in long fused rod stretching underneath phallus to form subphallic bridge (Fig. 2). Inferior appendages each with apicoventral end produced caudad in blunt triangular lobe; elongate dorsal portion divided into two lobes equal in length, anterior lobe club-like and setose, posterior lobe broad at base, reduced to a narrow, semi-membranous apex in lateral view (Fig. 2), in ventral view with its outer edge produced laterally in two small earlobes and its inner edge fringed with two extremely long, stout setae basomesally and longitudinal row of 3–4 smaller setae distally (Fig. 4). Subgenital plate bifurcated, fused with phallus basally, with its apices laid on subphallic bridge (Figs 2, 5). Phallosome heavily sclerotized, tube-like with huge, bulbous base, and with its distal portion strongly expanded laterally in pair of oval lobes (Fig. 2).

Holotype ♂, China, Guangdong Province, Wuhua County, Mt. Qimuzhang, 9 km NE of Datian town, west tributary of unnamed stream, 600 m upstream of dam/reception (23°49'N, 115°22'E; alt. 431 m), 30 May 2004, coll. ZHOU Xin. Paratypes: China, 1 ♂, Guangdong, Wuhua, Mt. Qimuzhang, 9 km NE of Datian Town, east tributary of unnamed stream 300 m upstream of dam/reception (23.83°N, 115.40°E; alt. 426 m), 30 May 2004, coll. YANG Lian-Fang, J. C. MORSE; 1 ♀, Guangdong, Zhaoqing, Dinghu District, Mt. Dinghu Forest Ecosystem, Research Station, Academia Sinica, Donggou (23.16°N, 112.53°E; alt. 132 m), 24 May 2004, coll. YANG Lian-Fang, ZHOU Xin; 1 ♂, Guangxi Province, Shangsi County, Mt. Shiwanda National Forest Park, Shitou River at second tributary, 3.4 km SW of main entrance to the Park (21.9°N, 107.9°E; alt. 392 m), 6 June 2004, coll. YANG Lian-Fang and C. J. GERACI; 1 ♂, Zhejiang Province, Mt. Tianmu (30.4°N, 119.5°E; alt. 500 m), Houshanmen, 3 July 1998, coll. WU Hong; 1 ♂ Zhejiang, Linan County, Mt. Tianmu, Shanmen Zao Stream at entrance (30.3°N, 119.4°E; alt. 293 m), 26 July 2011, coll. SUN Chang-Hai.

**Etymology.** The Greek word, *sinensis* = “of China” in reference to its endemic distribution in China.

**Distribution.** China, Guangdong, Guangxi, Zhejiang Provinces.

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## 中国新纪录——隐刺多距石蛾属及一新种记述（毛翅目，多距石蛾科）

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**摘 要** 记述多距石蛾科中国 1 新纪录属，隐刺多距石蛾属 *Pahamunaya* Schmid, 1958，同时描述 1 新种，中华隐刺多距石蛾 *Pahamunaya sinensis* sp. nov.。模式标本保存在南京农业大学昆虫标本馆。

中华隐刺多距石蛾，新种 *Pahamunaya sinensis* sp. nov. (图 1~5)

本种与越南种 *Pahamunaya directoris* Malicky, 1995 雄性外生殖器的主要区别特征如下：新种第 9 节下附肢背部具长度约相等的 2 个分枝，前分枝棒槌状并多毛，后分枝扁叶状，亚长三角形，其外侧缘具 2 个耳状突起，内侧缘具 1 排细刚毛，基部的 2 根极为粗长；而后者下附肢背部的前分枝短小，末端三叉状，后分枝简单，腹面观呈弧状突，无粗刚毛。

正模♂，广东省五华县（23°49'N，115°22'E；海拔

431 m），七目嶂，大田镇东北 9 km，水坝上游 600 m 无名溪西支流，2004-05-30，周欣采。副模：1 ♂，广东省五华县（23.83°N，115.40°E；海拔 426 m），七目嶂，大田镇东北 9 km，水坝上游 300 m 无名溪东支流，2004-05-30，杨莲芳、J. C. Morse 采；1 ♀，广东省肇庆市（23.16°N，112.53°E；海拔 132 m），鼎湖山保护区东沟，2004-05-24，杨莲芳、周欣采；1 ♂，广西上思县（21.89°N，107.91°E；海拔 392 m），十万大山保护区石头河二级支流，距保护区入口西南 3.4 km，2004-06-06，杨莲芳、C. J. Geraci 采；1 ♂，浙江天目山（30.4°N，119.5°E；海拔 500 m），后山门，1998-07-03，吴鸿采；1 ♂，浙江临安天目山山门藻溪（30.32°N，119.44°E；海拔 293 m），2011-07-26，孙长海采。

**关键词** 毛翅目，多距石蛾科，隐刺多距石蛾属，新种，新纪录。  
**中图分类号** Q969.411.4

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